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Progress Report

TRAFFIC SPEED REPORT NO. 67

K. B. Woods, Director TO:

Joint Highway Research Project

November 19, 1959

FROM:

H. L. Michael, Assistant Director

Joint Highway Research Project

File: 8-3-3 Project: C-35-10C

Attached is Traffic Speed Report No. 67 which has been prepared by Mr. Donald F. Petty, Research Assistant on our staff under the direction of Professor H. L. Michael.

This report presents the speed data and an analysis of these data collected during the summer of 1959. The project has conducted similar studies at the same locations semi-annually for the past twenty years.

Of particular interest in the results of this study is the 6.1 MPH increase in the average speed of heavy trucks on four-lane highways. This increase is probably due to the 5 MPH increase in the speed limit for such trucks on such highways.

Copies of this report will be distributed as usual to the Indiana State Police, the Indiana Office of Traffic Safety and the Bureau of Public Roads. The report is submitted for the record.

Respectfully submitted,

7! A. Frankad

H. L. Michael, Secretary

HLM: pg

Attachment

cc: F. L. Ashbaucher

J. R. Cooper

W. L. Dolch

W. H. Goetz F. F. Havey

G. A. Hawkins (M. B. Scott) J. E. Wilson

G. A. Leonards

J. F. McLeughlin

R. D. Miles

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Progress Report

TRAFFIC SPEED REPORT NO. 67

By

Donald F. Petty, Research Assistant

Joint Highway Research Project Project No: G-36-10C File No: 8-3-3

> Purdum University Lefayette, Indiana

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1949-1959		9 0 6		0 0	0 0	0	\$

TRAFFIC SPEED REPORT NO. 67

This report covers spot speed observations made during July and August 1959. All observations were made of free moving vehicles on level tangent sections of rural highways. The locations of the speed stations were the same as for previous studies and are as follows:

- 1. U.S. 52-1.0 miles South of South junction of S.R. 28 (Dual Lanes)
- 2. U.S. 52-1.0 miles West of Klondike (Dual Lanes)
- 3. U.S. 52-2.2 miles Northwest of Templeton (2 Lane)
- 4. U.S. 31-7.2 miles North of Perrysburg (2 Lane)
- 5. S.R. 25-0.7 miles South of Americus (2 Lane)
- 6. U.S. 41-1.0 miles North of Boswell (2 Lane)

An Electromatic Radar Speed Meter was used to collect the data for this study. The meter was concealed as part of a rural mailbox and placed from two to three feet from the edge of the pavement. It was directed along the highway at a small angle with respect to the direction of traffic so that it was not necessary to make an angle correction to the readings.

The radar equipment used will not operate properly if the voltage varies more than minus 1/2 volt or plus 1 volt from the optimum twelve volts.

The voltage was therefore checked periodically in the field and maintained within the desired range. Also, correct calibration was maintained by periodically checking it with a 60 mile per hour tuning fork.

The observers concealed themselves from traffic as much as local conditions permitted. A 150 foot cable was used between the meter reading unit and the pick-up unit. It is therefore believed that the speeds of the observed vehicles were not influenced by the observers or the equipment.

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A summary of the results of this study, as well as of the last seven studies, is given in Table I. Indiana state law limits the speed of passenger cars and trucks under 5,000 pounds (GVW) to 65 miles per hour. The speed limit of trucks over 5,000 pounds (GVW) is 50 miles per hour on all highways except that on four-lane highways which have a median strip of at least twenty feet in width the speed limit is 55 miles per hour. This new speed limit for trucks has been in effect since about May 1959. However, very few speed limit sig:s have been posted in the state to reflect this change. It also is not known what percentage of the truck drivers know about this speed limit change.

Truck speeds are shown in the tables for three groups: light trucks, heavy trucks, and all trucks; also it is noted whether the road is 2 lane or 4 lane. All 4 lane observation stations were on highways with a median of greater than twenty feet. Since weights were not taken in this study, light trucks (less than 5,000 pounds) were considered to be only panel trucks and pick-up trucks. All other types of trucks were classified as heavy (over 5,000 pounds).

The passenger car data were also classified in three groups: Indiana, out-of-state, and all passenger cars. The classification was determined by observing the license plate on each passenger car after it had passed the station.

So that an easy comparison can be made between the results of the present study and the last previous study, the results from each speed station for both studies are tabulated in Tables II through VII. All speed observations for this study were taken at approximately the same locations as for the previous study.

Average and 65th percentile speeds were computed for each vehicle group from the sample of vehicles taken at each study site and some of the differences between average speeds thus computed and average speeds similarly computed for the last study (December-March 1959) are briefly discussed. The average speed for all passenger cars increased 0.2 miles per hour since the last study while the average speed for all trucks increased 1.6 miles per hour. Indiana passenger cars increased their average speed on two-lane highways by 0.1 miles per hour while their average on four-lane highways increased 0.2 miles per hour. Out-of-state passenger cars decreased on average speed by 2.4 miles per hour on two-lane highways while their average speed on four-lane highways decreased by 1.6 miles per hour.

The average speed for light trucks decreased 0.7 miles per hour on twolane highways and 3.6 miles per hour on four-lane highways. Heavy trucks increased their average speed on two-lane highways by 1.2 miles per hour and 6.1 miles per hour on four-lane highways. This average speed increase for heavy trucks on four-lane highways is probably the effect of the new Indiana speed limit.

Trend information on average speeds and 85th percentile speeds for passenger cars and trucks is shown in Table I and Figures 7 and 8.

TABLE I

SUMMARY OF SPOT SPEED OBSERVATIONS ON INDIANA HIGHWAYS

(Free-Moving Vehicles on Level, Tangent Sections)

	agussan ga ving spirangap gaman da da daga kilikin dagaman da mag		Passenge	er Cara		6	rue ks	The state of the s
STUCIES PRODUCTS TO THE ARROWS AND		Ind Mean	Non-Ind Mean	Ali. Menn	A11 65 por	Light Mean	Heavy Mean	Mean
Two-lane Highways	Peb. 156	54.9	58.0	. 55.9	63.3	47.2	43.2	liket.
A STATE OF THE STA	Aug. 155	55.0	56.3	55.5	63.4	50.6		46.6
	Mey 157	55.6	59.1	56.9	615.0	50.2	44.8	46.1
	Augo 57	55.5	56.7	55,9	62.1	51.7	45.8	47.3
	Aug. 158	54.3	56.3	55.0	637	53.0	46.3	27.8
	Mar. 159	55.5	57.07	56.1	62.9	50.4	45.4	46.2
	Aug. 159	55.6	55.3	55.9	63.2	1.9.7	46.7	48.0
Four-land Highways		58,1	60.1	58.7	65.7	47.8	45.2	45.8
	Aug. 156	57.4	58.8	<u> 58,2</u>	66.8	49.6	46.0	47.4
	May 157	59.9	63.6	61.0	69.0	52.2	46.0	47.9
	Aug. 157	57.5	59.9	<u>58, 5</u>	64.8	52.0	46.5	47.6
	Aug. 158	58.0	59.4	59.7.	65.0	54.3	49.0	
And the state of t	Mar. 159	58.2	61.7	59.0	64.9	53.6	47.0	48.4
	Aug. 159	58.4	60.3.	59.1	54.5	50.0	50.1	47.5
Highways	Feb. 456	56.0	58.6	56.9	53.8	47.3	44.0	44.9
	Aug. 156	55.7	57.3	56.4.	64.5	50.2	45.6	45.5
	May 157	57.2	(0.3	58.3	66.0	50.9	45.2	46.0
	Aug. 157	56.2	58.3	56.9	63,2	518	46.2	47.4
	Aug. 158	55.7	57.9	56,5	63.1	53.4	47.5	48.7
	Mar. 159	56.6	59.0	57.2	63.1	515	45.9	47.0
	Aug. 159	56.5	58.4	57°4	63.5	50.6	47.8	48.6

No. 1 - 1.0 Mile South of South Jct. S. R. 28 on U. S. 52 Station

Weather Cloudy
Last Previous Observation (Speed Report No. 66 Date Feb. 25, 1959 Time 2:00 - 4:15 P. 4 Jane Divided 24 Bituminous Concrete This Observation Date Aug. 3, 1959 Time 8:50 - 10:50 A.M. Surface

SES			Present							1							0							
BUSSES		LIV	Last							1									1					1
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	5000	or more	Last	135	17.3	68 9 85 7	38.5	14	2.2	0.0	0.0	0.0		-			32		29	11.5 51	5/1		30	
SX	Less than	5000 pounds	Present	12	55.1	91.7	83.3	66.7	25.0	0.0	0-0	0.0	5	59.6	6		53		7	51.9	58		36	. 1
TRUCKS	Less	5000	Last	26	53.5	81.6	60.2	1.6.2	0 90	3.0	3.0	0.0	าล	55.1	20		38		80	56.5	61.		1.5	
		1	Present	82	50.4	86.6	51. B	20.7	6.1	0	0-0	0.0	1.11	1.0.7					38	51.3]		
		TA T	Last	191	18.3		1,3.5	\ q	6.2	9	9	0.0	98	50.5			-		75	1,5.8			1	
		diana	Last Present	237	61.1		98.7	80.5	65.0	27.1.	5.5	1.3	129	61.9	7, 94		1.3	-	108	60.3	76		1.2	
		Non-Indiana	Last	81	60.7	-	ا 1,36	87.7	61.2	23.5	8.6	2.5		7	71.		50		77	58.9	75		38	-
ER CARS		ans.	Present	218	59.7	-	93.6		57.3		5.0	1.1.	011	59.1.			7.0		108	6		_	374	
PASSENGER		Indiana	Last Pres	301	59.1		91.7	80.1	51. B	20.0	0	2,3	109	59.1	86	1	38	1	192	3	75		32	
		All	Last Present	455	4.09		96.3	85.3	61.3	21.8	U.S.	U	239	60.7					216	60.1	1			
		⋖	Last	382	59.7		92.1	81.7	56.8	21.5	9.14	2.36	14.5	60.5	,	1		1	237	2		-		
			OBSERVATION	No. of Vehicles Obs.	Ave. Speed (m.p.h.)	, quant 57 ou	יטי	P	1 60 m n h	X	E C H. D. D.	№ 6 75 п.р. h.	No	Ave. Speed (mopoho)		State or Ivpe	Min. Speed (m.p.h.)	State or Type	Ne. of Vehicles Obs.	S Ave. Speed (mop.h.)	Max. Speed (m.p.h.)	State or Type	Min. Speed (m.p.h.)	State or Type
							3	ų.	Λ	T	[A		Œ	n	BC		S		Œ	Inc	BC		I	



TABLE

Station No. 2 - 1.0 Mile West of Klondike on U. S. 52

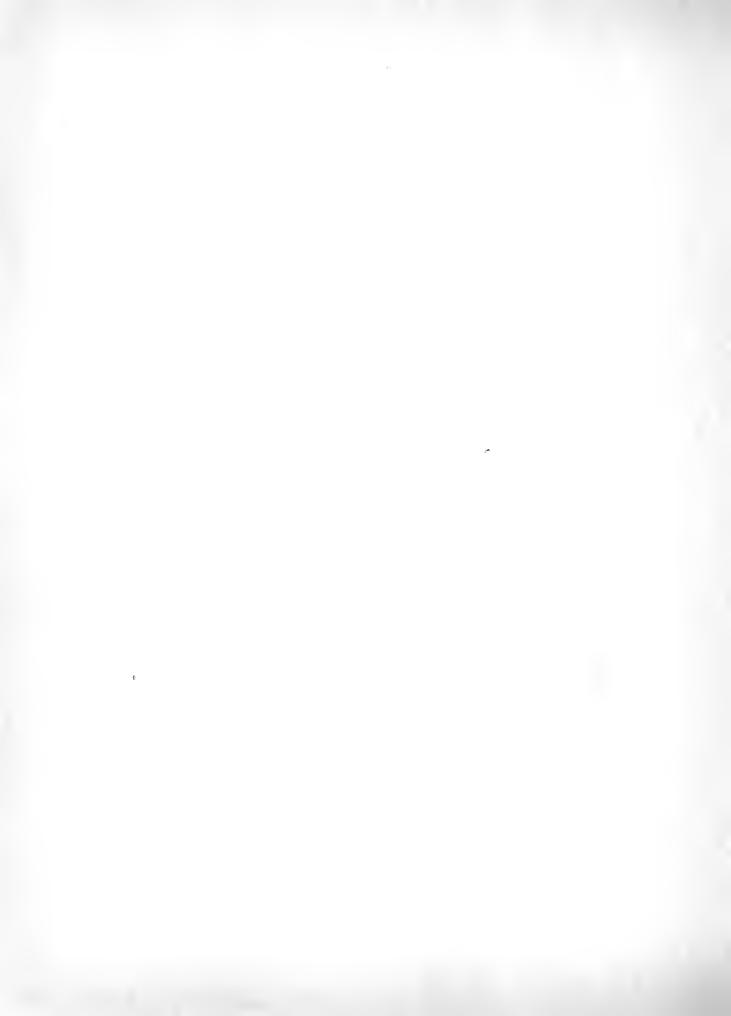
Surface 4 Lane Wivided, 24' Portland Cement Concrete
This Observation

Date July 10, 1959
Time 2:45 P.M. - 5:10 P.M.

Last Previous Observation (Speed Report No.66

Date December 30, 1958
Time 1:30 P.M. - 4:05 P.M.

SES.		16	Sugar	1	•		2			1		-			1					8 3	1			
BUSSES	ררא	리	1881			1	1	-		1	1	1	-					1	1	6	4			
	spunod 0005	or more	Last Fresent	67	1,9.3	77.6	56.7	16.4	7.1.	7.5	0	0	37	1,7,3	, 99		30		33	51.4	62		25	
	0005	5	Last	78	9.97	70.5	24.0	0	1,3	7			28	1,8.0	56		7		20	1,5.8	52	-	20	
SX	than	omine.	resent	15	52.0	80.0	66.7	33.3	12.2	13.3	4.2	C	9	51.5	72		38	\	6	52.3	99		30	
TRUCKS	Less than	Summer over	1881	31	53.7	80.66	71.0	11.9	20.0	12.0	200		18	53.2			31.		13	54.6	89	0.00	33	1
		7	Present	82	18.6 49.8	73.1. 78.0	37.6 58.5	3 19.5) B K		+		1=	1-	_				4.2	6 51.6				
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	4 F	Non-Indiana	Last Present	157	3 58.6		89.8		L	L	1	700	8	K 56 E	20		36		89	1 61.3	76		144	1
		Non	1	120	61.8		07.1	2.5	7.2	100	200		12	17	Ş		1		75	62.	46	ı	39	1
GER CARS	1	Ingrana	Present	228	57.2		8	1		1	200	7.7	101	-			30		121		70		1,2	
PASSENGER		Tug	Last Pres	320	57.1		0.75	8 44	,	1	7.00	×	3.50	200	1	+	36	2	162	56.0	78	1	38	
		ALL	Last Present	385	57. R		808			4	7	2.0	200	1	-	1	1	1	192	-		1		
		A	Last	17.0	58.1		8	77 8	1	1	2	0	1	3 5	*	1	1	1	237	58.0	1	1	1	1
			OBSERVATION	No of Vahicles Obs.	Avre Speed (m.p.h.)	1.5 m 7.h	0 to 10 to 1	tp gu		dod m Oo	र् छ ५५ क फ ्रेफ	E C C Bopen	C (7) MoDello	No. of Venicles Obs.	1	MAX. DOGG LIE DOLL	War Smead (m n h		of Vehicles Obs.	Speed (m.n.h.)	BO Wer Speed (m.p.h.)	State or Type	Win. Speed (m.p.h.)	State or Type
				2				TU			וני			INI			13	4	0	ואַנו	BO.	1_	H	4



Station No. 3 - 2.0 Mile Northwest Templeton on U. S. 52

Weather Glondy	Last Previous Observation (Speed Report No. 66) Date January 8, 1959 Time 2:45 4:30 P.M.	
Surface 2 Lane 22 t Bituminous	This Observation Date July 17, 1959 Time 3:00 P.M. 4:30;P.M.	

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Liana	Present	66	56.3		82.8	59.6	38.		7.0		35	5,	28		38		64	56.2	7/6		28		
Inc	Last	229	56.1		84.6	50	26.2	7.1	0	0	122	£1. 1	63	1	30	:1	107	58.4	7.7		39		
	Image: contract to the contract	Present	222	56.5		86.0	63.1	- 1				7	56.3		1			155	56.7			.	
A	Last	378	56.7		85.6	63.4	31.2	10.1	2.4	0.3	219	51.1					159	59.8	Ì		1		
	ORSERVATION	No. of Vehicles Obs.	Ave. Speed (m.p.h.)	no 45 mapaha	80 € 50 п.р.р.	F of 55 mpoho	de 60 mon	N X 65 m.p.h.	170 m.p.h.	№ 0 75 mop.h.	No. of Vehicles Obs.	Ave. Speed (m.p.h.)	Max. Speed (m.p.h.)	State or Troe	Min. Speed (m.p.h.)	State or Type	No. of Vehicles Obs.	Ave. Speed (m.p.h.)	Max. Speed (m.p.h.)	State or Type	Min. Speed (m.p.h.)	State or Type	
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TABLE

station No. 4 8.0 Wiles II. of Perrysburg on U. S. 31

Weather Last Previous Observation (Speed Report No. 66. Date March 30, 1959 Time 12:35 P.L. - 3:00 P.M. Weather Jurface 2 Lane 22' Bituminous Tris Observation

Date Aug. 10, 1959 Time 10:10 A.N. - 12:40 P.M.

	PASSENGER CARS	(2)				THUCKS	SA			BUSSES
	;	;				Less than	than	500	2000 pounds	۲۲
	Indiana	Non-indiana	dlana	ALA	-	SOUD pounds	spuno	140	or Hore	ALL
Last Present	Last Present	Last	Present	Last	Present	Last	Present	Last	Present	Last Present
	250	68	80	83	98	26	27	57	59	
_	۲	7 85	55.7	6-47	18.8	50.6	48.9	16.6	18.8	
				~	71. 1.	80.8	49.3	59.7	81.4	
	79-1. 83-2	92.7	82.5		8 2	65.4	1	36.8	50.3	
'		00	5.5	13.3	15.1	24.9	22.2	7.0	11.9	
		202	3	0 9	20	11.5	11.1	3.5	3.4	
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		-				1				
	34.0 31	1,8	34			38	38	36	32	
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otation No. 5 - 1.0 Mile South of Americus on S. R. 25

,	Last Frevious observation (Speed Report No. 66)	
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	Repor	
Harner Cloudy	Speed	0.10
ระเลยาย	ion (70
D <	servat	7.40 JOE 7. 10 JOEO
	AS OF	400
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inous	on	
Riting	Inis observation	
100	3 (086	
urface 2 Lane 221 Bituminous	Take.	
C 90 P	4	
L'Inti		

Date March 18, 1959 Time 2:00 - 4:15 P.M. Date July 16, 1959_ Tune 2:35. P.M. -_-

		PASSENGER CARS			Thuch		BUSSES
					Less than	5000 pounds	
	A11	Indiana	Non-Indiana	a All	5000 pounds	OF HOFE	ALI
OBSER ALION	Last Fresent	Last Present	Last Fresent	at Last Fresent	Last Present	Last Fresert	Last Present
Sq. Sr	1	337 284	1,1	150 69	34 23	116 46	
Ave Speed (H.D.h.)	-	C	55.9 55.8		50.8 49.5	-+	
			-			57.8 73.9	
7	76.4. 78.8	76.0 78.9	85.7 78.0	0 31.3 42.0	50.0 52.2	25.9 37.0	
110		677		=	29.4.34.8	-+	
99:	29.6 30.5	29	-	=	17.7-13.0	0.9	
oxr ent	11.7 8.3	11.6 8.5	14.3 7.3	3 (-0.2.9	L.O . 4.3	0.0 2.2	1
		<u>ښ</u>	14.3	0 0 1.4	0.0 - 0.0	0.0 2.2	
1 2 2 2 2 N	1.7 6.6	, 3	7.1 C.		0.0 0.0	+	
1	-	117	7 19	72 33	19 8	53 25	
	9	4	60.6 56.	+	48.3 48.0	14.7 45.9	
Max	- +	70	76 68		63 60		
		34 32	50 40		39 40	36 36	
State or Type			-				
No	197 189	190 167	7 22		15 15	-1-	
Ave Speed (noth	54.6 55.3	54.7 55.4	51.1 55.0	0 48.1.51.3	53.9 51.8	46.7 + 51.0	!
- 1		-	99 09		63 65	10	
State on lype			1				
Min Spee' (m.p.h.)		33 40	077		42 40	35 40	
State or Type			-				



station No. 6 - 16 Wile North of Boswell on U. S. 41

Jurface ___ Lane -22!-Portland Cement Concrete ___ ____ Inis Ubservation

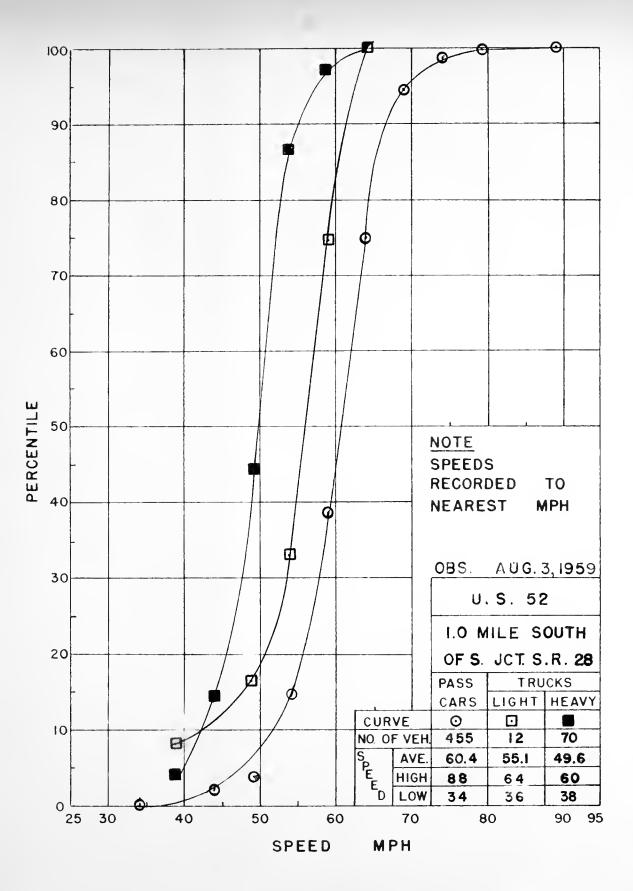
Date September 1, 1959 Time 9 - 11:45 A.M.

Last Previous Observation (Speed Report No. 66)

Date March 31, 1959 Time 9:30 A.M. - 12:30 P.M.

BUSSES	All	Present		1	1	-		-	-	-	1		1	-				1	1				
BUS	Q,	Last	-	-	1	-	1	1	1	1	_	-1	-	-				1				1	
	pounds	Freser t	63	9.1/17	50.8	25.4	8.4	0.0	0.0	0.0	0	37	15.5	55	1	34	1	26	43.4	56	1	30	1
	5000 or	Last	76	44.2	47.4	7-12	0.7	0	0.0	0.0	0	43	17.77	55		36		33	44.3	58		30	
TRUCKS	than pounds	Present	24	50.6	83.3	54.2	16.7	12.5	8.3	0.0	0	13	7.9.5	9	1	39	. 1	7	52.0	69		07	
TRU	Less 5000 p	Last	23	0.87	9.69	47.8	21.7	4-4	0.0	0,0	0	6	45.7	51	. 1	36	\ 1	77	9*67	79	1	32	-
	ATI	Present	87	45.3	59.8	33.3	8	3.4	2.2	0.0	0.0	50	7.6.5					37	46.0				
	A	Last	99	45.1	52.5	27.3	8.1	7.0	0	0.0		52	0 7 7					27	6.57				
	diana	Present	135	57.6		85.9	68.9	1.5.2	17.8	7, -4		73	0.77	77	t	0.7	}	62	58.1	7/4	1	07	ł
	Non-Indiana	Last	183	56.6		91.3	62.3	32 B	භ ර			0	57.0	70		1.0		89	56.1	77	1	38	-
PER CARS	Indiana	Present		56.4		83.1			2 - [[_	500	300	>	36		67	56.6	77		35	
PASSANGER	Indi	Last		56.2		79.7	63.3	31. 1.	7	4	14	717	F.7 F.	30	3	- 2		61.	55.0	7.7		34	
		Present	259	57.0		8/6	0.99	1.3	12.4	10	7 - 7	1000	0 7 4	0.00				00 4	57.3				
	14	Last		ν,		86.5	_		1,0	_	7.07	101	-	176				1 53	2				
		OBSERVATION	sa ps	Ave Speed (B.D.K.)	,	สิบ	I IP Fu	11	EN.	<u>া</u>	30	Control of the contro	No. of ventoles on		Max Dorest (He		A TANA O TANA	No of Vehicles Obs	Ave Speed (B.3.h.)	1	State or Type	Min Speed (m.p.h.)	1





FIGURE

		an.	

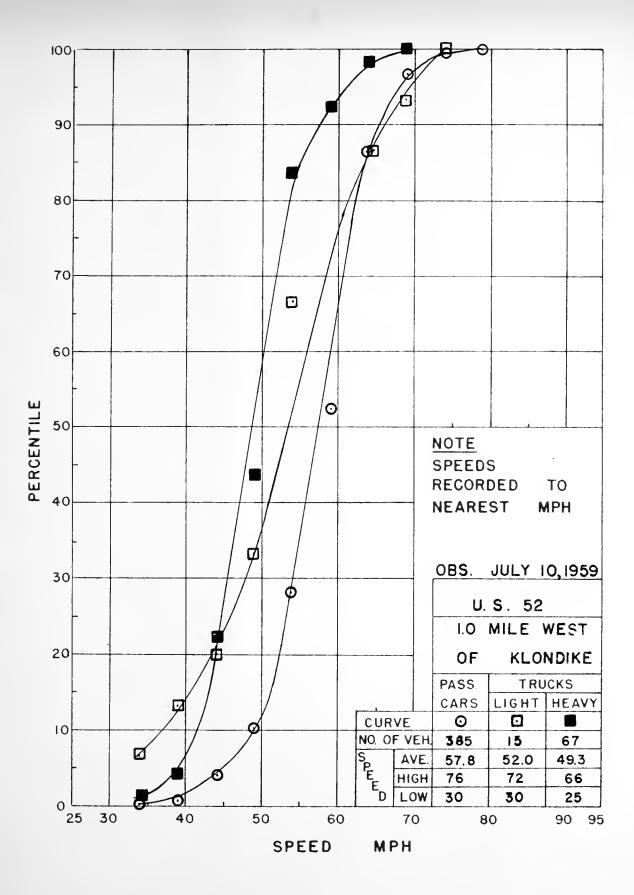


FIGURE 2



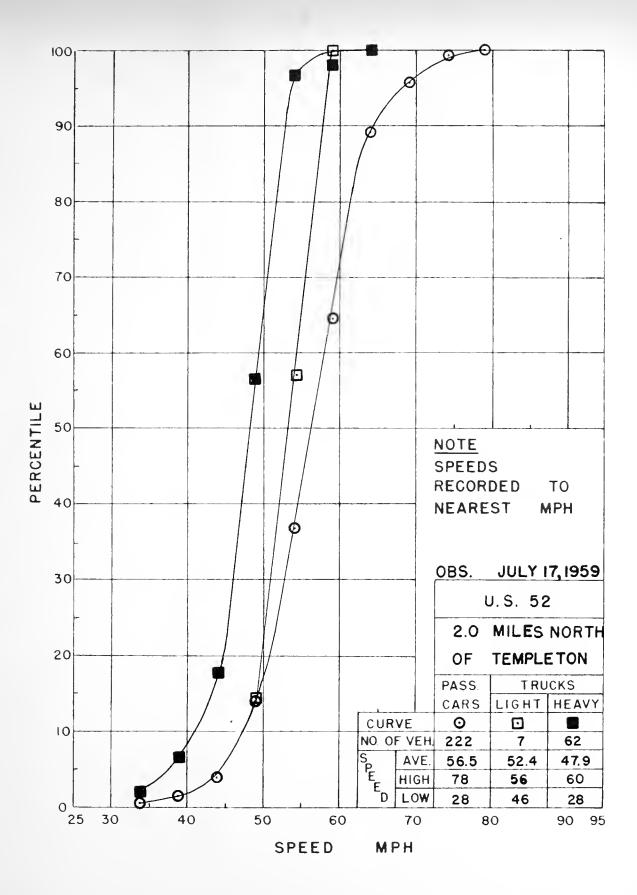


FIGURE 3

	ge.	

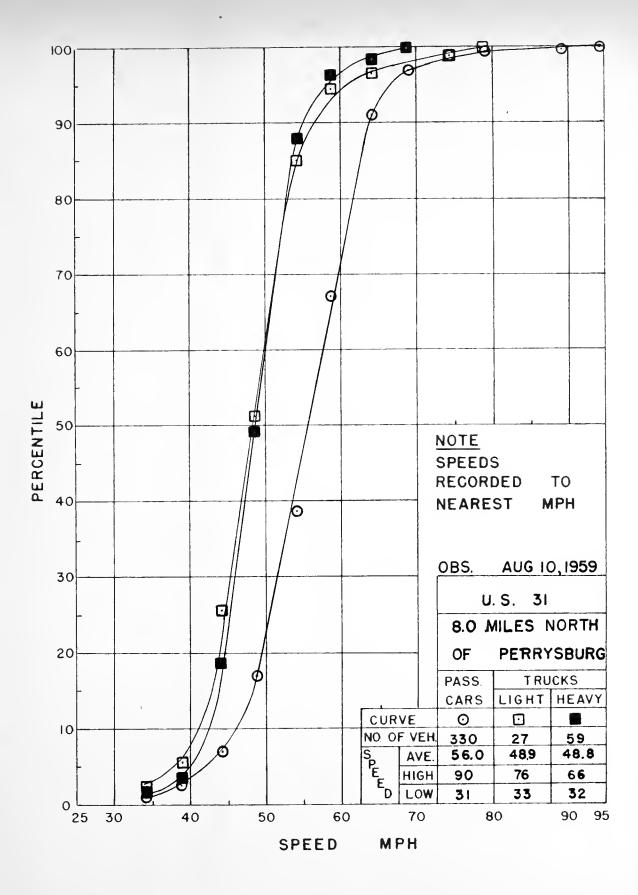
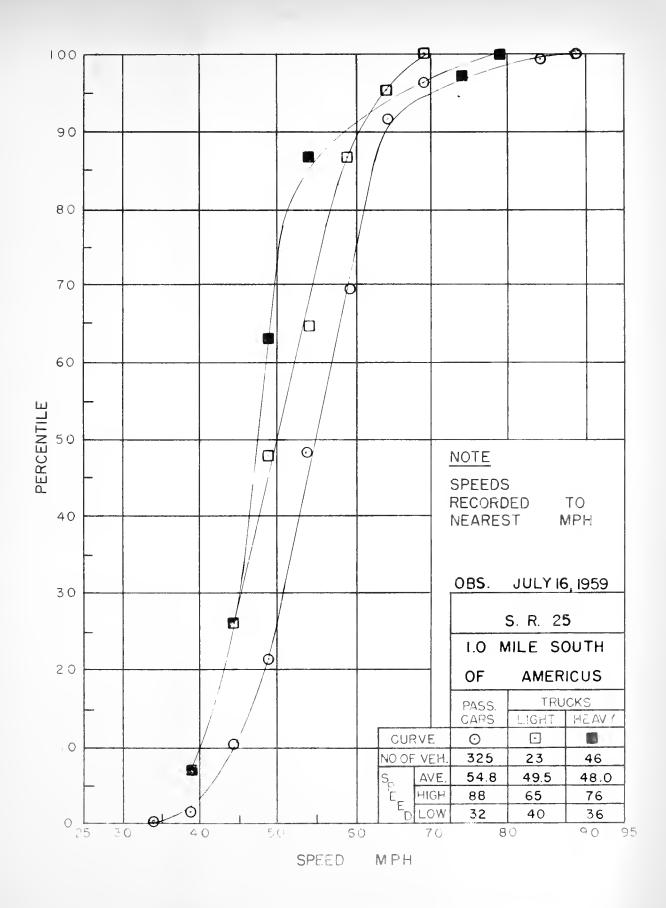


FIGURE 4

		s*	



	ب	

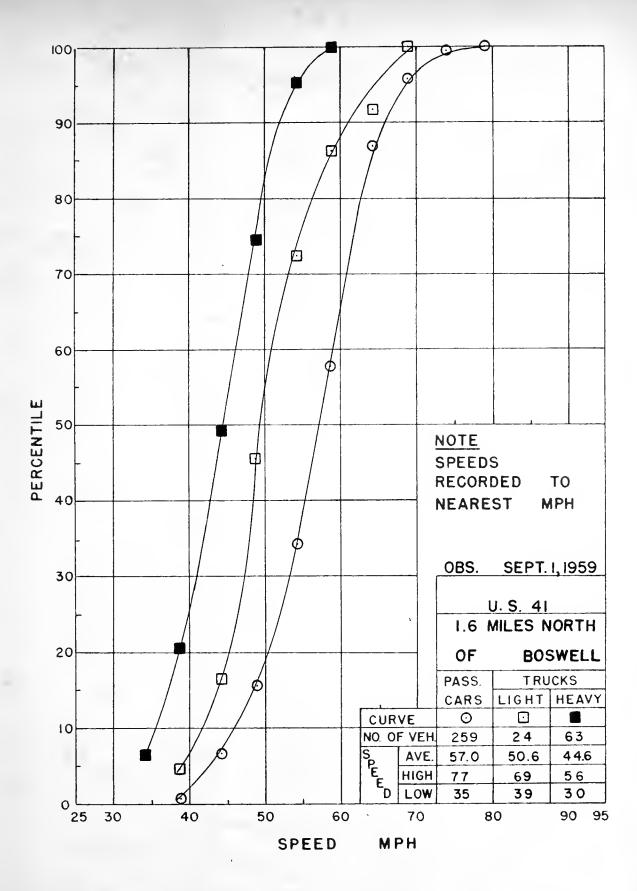


FIGURE 6

		,	

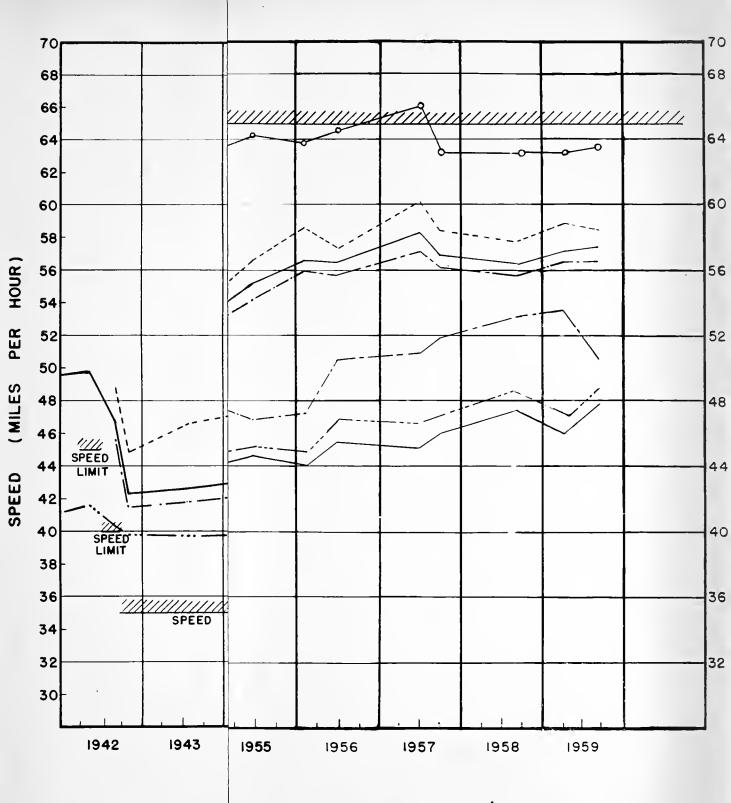


FIG. 7



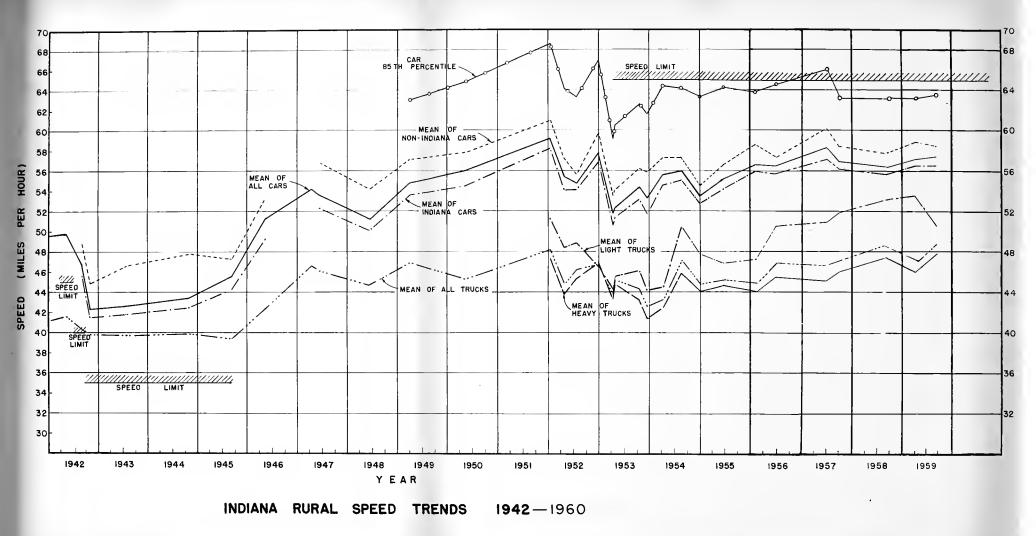
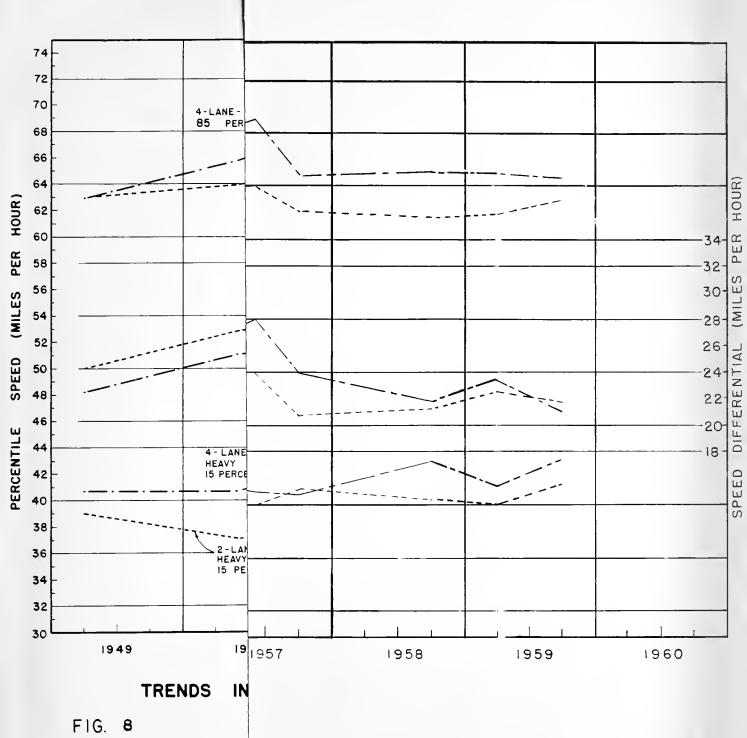


FIG. 7







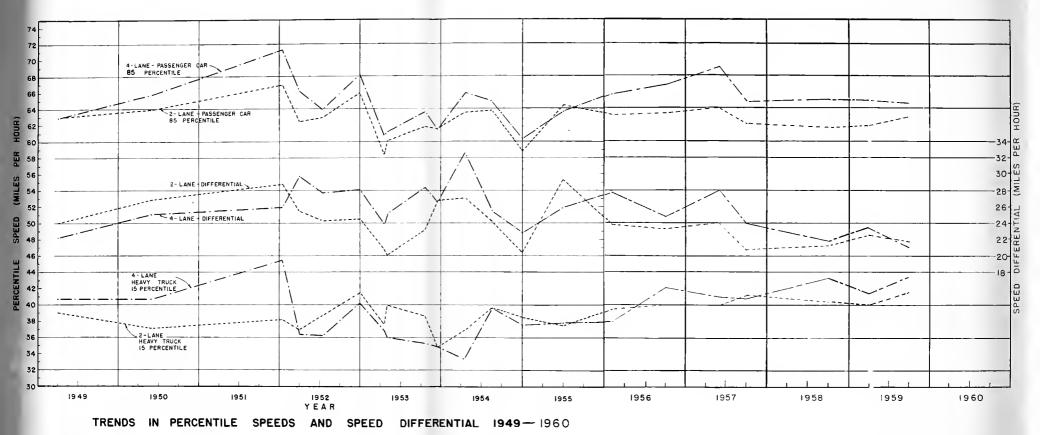


FIG. 8

